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shown by other sections. The same specimen of ore has unfortunately not been used for all the sections.

It is hoped eventually to extend the metallic spectra to three further sections, thus including the Fraunhofer line (C). But as this must be a much more laborious undertaking it has been for the present postponed.

As before, the photographs have been taken with a Rutherford grating ruled 17,296 lines to the inch, and about 1¾ inch square, and they have been enlarged from the original negative about 8½ times.

The writer is unaware of any photographs of the metallic spectra, below the (H) group of lines in the violet, having hitherto been produced to the large scale of the present photographs.

The photographs which accompany the Paper have been placed in the Library.

Note on Terby's White Spot on the Ring of Saturn.

By A. A. Common, F.R.S.

On March 6, at 9.12 P.M., Dr. Terby at Louvain, using his 8-inch telescope, saw what he announced as a white spot on the ring of *Saturn* near the shadow of the planet. Subsequent observations confirmed this appearance to him, and since his observations were announced other observers in different parts of the world have been able to see a white spot on the rings.

On March 6 the 5-foot reflector at Ealing was in use on *Saturn* for several hours, including the time at which Dr. Terby first saw this white spot. Details of the markings on the planet and rings were noted, special attention was paid to the shadow (of the planet), which was seen to be irregular in outline, but nothing in the nature of a bright spot near it was noticed. The positions of the satellites were noted at 9 o'clock, and at 9.30 it was noted that *Mimas* was visible, although not clear of the ring in either case. The first information received at Ealing of Terby's white spot was a telegram from Aberdeen on March 14. "Terby announces région blanche sur anneau *Saturne*, contre ombre globe." Next day *Saturn* was observed with the 5-foot; the white spot was specially looked for, the ring was carefully examined all over, but nothing unusual could be made out. *Saturn* has been observed on ten other evenings since then by Mr. Taylor and by myself, but in no case has any definite white spot been seen.

The ring near the shadow always appears slightly brighter by contrast than the other portions of the ring do; and this effect is found to be much more marked with the 6-inch refractor than with the 5-foot reflector. A dark wedge has been used on many occasions since March 14 by Mr. Taylor and myself on the 6-inch telescope and on the 5-foot, and in every case we have

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found that the ring disappears at the same time all round, whereas if the white spot had any real existence (*i.e.* if it were really brighter than the other parts of the ring), it would have remained visible after the other portions of the ring had been cut out by the dark wedge. The appearance of increase of brightness can be produced with either the 6-inch refractor or the 5-foot reflector, on any part of the planet, at any time, by allowing it to pass partly out of the field when all parts of the ball and ring in immediate contact with the edge appear sensibly brighter than the rest of the planet. At the Lick Observatory, with an occulting bar on the 36-inch refractor, a similar effect was noticed at the edges of the bar.

The contrast appearance which is seen near the shadow of the planet on the ring is sometimes more obvious than at others, but atmospheric irregularities will explain much of this suspected variability. It is remarkable that such careful observers as Bond and others who have worked on *Saturn* should not have called attention to this appearance before, but it will probably be found much more prominent in certain positions of the planet and rings than in others.

The powers used have varied considerably; 300 has been generally used on the 6-inch, and as much as 1400 on the 5-foot. With the latter power the shadow has a decidedly notched appearance, the outer and brighter part of the middle ring (B) projecting farther into the shadow than any other part of the ring, although the outer ring (A) is closer to the planet than one would expect from the outline of the shadow on the inner portions of the ring. It may be that this notched appearance, which is only distinctly visible with very high powers, may have some connection with the appearance to which Dr. Terby directed attention, but the observations made at Ealing very decidedly point to the explanation of the supposed white region as an effect of contrast.

Saturn was photographed several times with the 5-foot in April. Although definition in the photographs is not good, the shadow can easily be made out by the absence of silver particles, but there are not the slightest indications of any bright spot on the rings near the shadow.

Photograph of the Nebula M 51 Canum Venaticorum.

By Isaac Roberts.

The photograph which is now presented is an enlargement to ten times the negative of M 51 *Canum Venaticorum*, R.A. $13^h\ 25^m$, D. + 47° 45′. The negative was taken on April 28, 1889, with an exposure of four hours, and it adds considerably to our knowledge of the structure and the surroundings in space of this

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